

## VI. Detailed Evaluation of the Preferred Alternative

### A. Measures of Effectiveness

Section IV evaluates how well this MTP meets the goals and objectives as presented in Section IV. It does this by testing the preferred alternative against performance measures designed to compare the outcome to each goal.

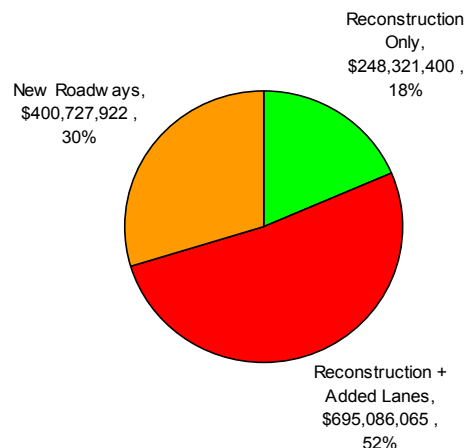
#### 1. Existing System Preservation

"To protect, maintain and promote the use of the existing transportation investment including pedestrian facilities, bicycle facilities, transit facilities and roadways."

##### Dedicated Funding

In order to test the goal that emphasizes the importance of maintaining the AMPA's existing transportation system; Figure VI-1 shows the portion of the total 2025 MTP roadway funds dedicated to reconstruction activities.

Figure VI-1 MTP Dollars Programmed by Project Type, 2003 – 2025

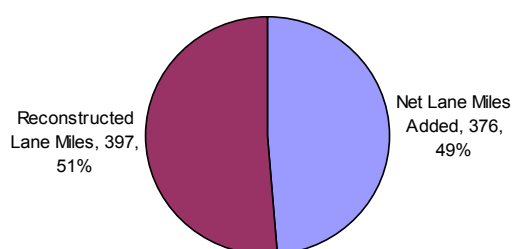


It shows that 70 percent of all roadway funding is dedicated to the improvement of existing roadways, some of them accompanied by the addition of new lanes, and that less than a third of the funds for roadways in this MTP are delegated to projects that involve the construction of a completely new roadway facility.

**Reconstruction**

Figure VI-2 presents the distribution of the type of work being done in lane miles rather than dollars.

*Figure VI-2 Type of Work by Lane Miles Affected, 2003 – 2025*



A total of 773 lane miles is affected by this MTP: new lanes, reduced lanes, and reconstructed lanes. 397 of these will be subject to reconstruction work only; 115 lane miles will be added to the existing roadway network (many in combination with reconstruction projects); 15 lane miles will be eliminated; and 276 lane miles will be added as part of new roadway projects. The result is a net addition of 376 lane miles by 2025.

**Lane Miles per Capita**

The ratio of lane miles to people is expected to decrease between 2000 and 2025, from 4.9 lane miles per 1,000 people to 4 miles per 1,000 people. This means that although road construction will certainly accompany population growth, new lane miles are produced at a much slower rate than the population is projected to grow. Another way to view the relationship between population growth and road construction is that for every 646 additional people in the AMPA, one mile of roadway will be added.

**Public Transit Investments**

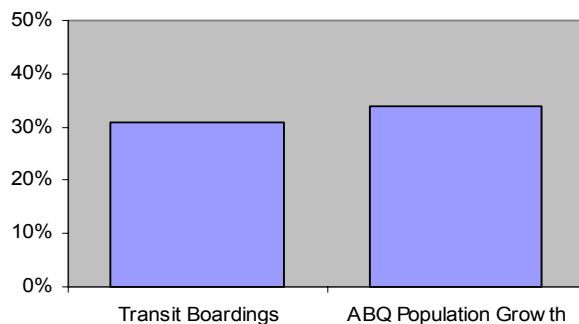
A region's commitment to the existing transportation system is also illustrated by the level of investment in public transit facilities. This MTP allocates nearly a third of its total budget to public transit enhancements. Proposed upgrades include a 12 percent extension of service miles in key areas to increase the connectivity and accessibility of transit service. In addition, increased bus frequency is proposed along 4 popular routes.

As shown by Figure VI-3, daily boardings are projected to increase by at least 31 percent to approximately 37,600. This is a fairly conservative number produced by the travel demand model. Analysis of the accessibility to this enhanced transit system suggests that higher ridership numbers should be anticipated.

### **Bikeway/Pedestrian Investments**

Investing in bikeway and pedestrian facilities is another measure of support for the existing transportation system. Existing facilities lack important connections that would allow bicyclists to remain on designated bikeways for the entire length of their trip. Additional bike lanes and bike/pedestrian paths/trails included in the 2025 MTP provide more opportunities for these connections. Good connectivity allows access to more places, thereby encouraging more trips. There are currently 186 centerline miles of bike lanes and bike/pedestrian paths/trails in the AMPA. That number is forecast to increase by 228 centerline miles to a total of 414 centerline miles of bikeways by 2025. The largest share of new bikeway miles, 58 percent, is expected to be built on roadways, with the remaining 42 percent on bike/pedestrian paths/trails.

*Figure VI-3* **Projected Growth of Transit Boardings and Albuquerque's Population, 2000 – 2025**



## **2. Preservation of the Physical and Social Environment**

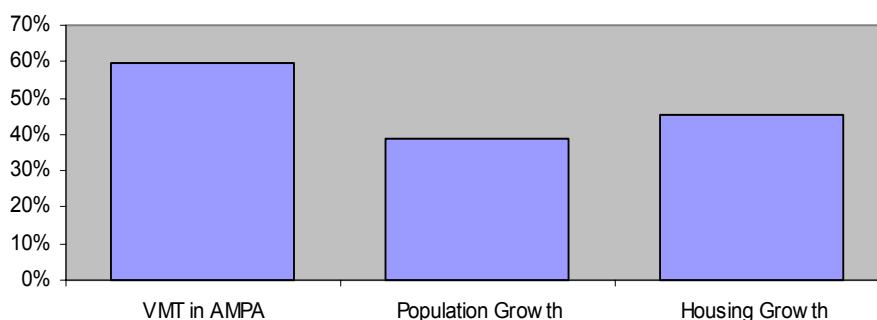
"To protect and enhance the social, cultural, and physical environment; promote environmental justice; and promote energy conservation to enhance the quality and livability of neighborhoods and community places."

### **Carbon Monoxide Emissions**

Carbon monoxide (CO) emissions released in large quantities hold

potential health hazards. It is therefore important to monitor those emissions and forecast them for future years in order to conform to the criteria of the federal Clean Air Act. The Environmental Protection Agency (EPA) requires a conformity analysis at the county level, which is why MRCOG reports CO figures for Bernalillo County rather than the AMPA. Due to the introduction of oxygenated fuels, tougher federal emission standards for new vehicles, and locally required vehicle emission inspections, CO from mobile sources in Bernalillo County is expected to drop dramatically between 2000 and 2025, from 361.52 tons per day to 246.79. Therefore, Bernalillo County is projected to remain in compliance with the EPA's mobile source emissions requirements through 2025.

*Figure VI-4 Projected Growth of Daily VMT, Population and Housing, 2000 – 2025*



### **VMT**

Moderating increases in overall vehicle miles traveled (VMT) is another means of moving towards a more livable social and physical environment. Increases in VMT can occur as a result of more trips or longer trips. In the AMPA, VMT is expected to increase by 61 percent by 2025. Increased trip length is responsible for one-fourth of that increase, while the remainder is caused by an increase in the number of trips. Daily VMT per capita is projected to increase by approximately 15 percent from 24.5 today to 28.3 in 2025.

A significant portion of the AMPA's increase in VMT and VMT per capita is attributable to trips that have only their origin or destination inside the AMPA. This is not surprising when one considers the population growth that is projected to occur in Valencia and Tarrant Counties, and the relative lack of services and basic employment in these areas.

### VTM and Population Growth

As illustrated by Figure VI-4, the rise in VMT in the AMPA is projected to surpass population growth over the life of the Plan.

### Gasoline Consumption

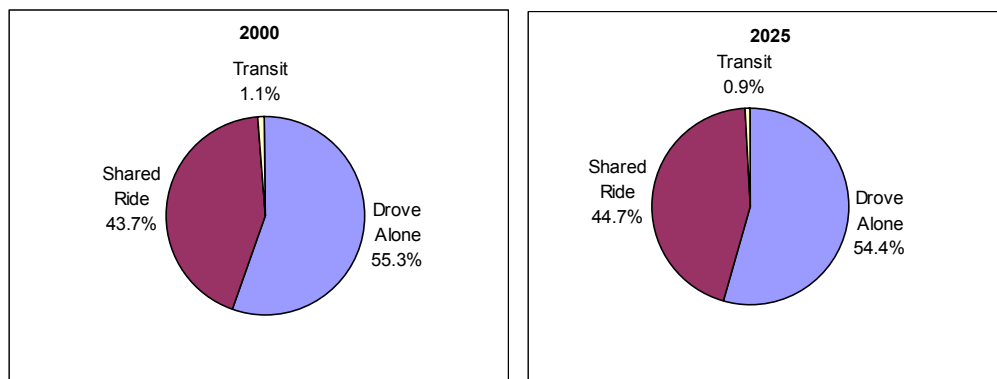
Gasoline consumption is expected to increase by 59 percent by 2025. Daily gasoline consumption per capita is expected to rise from 1.06 gallons in 2000 to 1.22 gallons in 2025. The impact of this increase on our environment may be tempered by the use of cleaner fuels, and an increase in hydrogen, natural gas, and other alternatively powered vehicles.

### Mode Share

Mode share projections for the AMPA from the travel demand forecasting model indicate that the mode split between driving alone, sharing rides, and transit will remain fairly consistent throughout the next 23 years. Figure VI-5 presents the modeled mode split for 2000 and 2025.

It is interesting to note that when work trips are isolated from total trips, the mode share is drastically different: in 2000, approximately 78 percent of AMPA commuters drove alone, 1.5 percent took transit, and 13 percent carpooled.<sup>1</sup>

*Figure VI-5 Projected Mode Share for all Trip Purposes, 2000 and 2025*



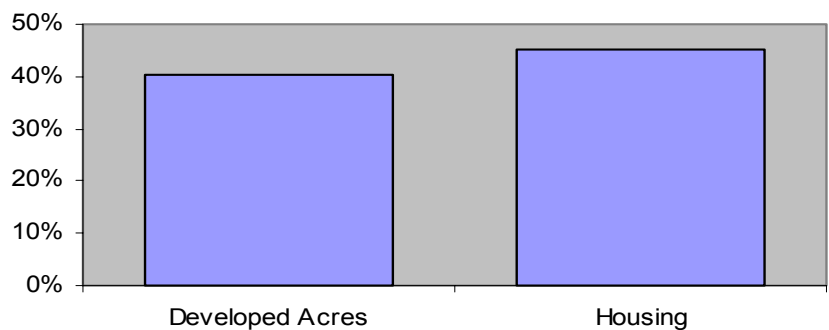
## 3. Urban Form

"To support the urban form and land use patterns adopted in local plans and guidance set forth in the approved Focus 2050 Regional Plan."

### Land Consumption

Comparing the pace of land consumption to the pace of housing

Figure VI-6 Projected Growth of Developed Acres and Housing, 2000 – 2025



growth is an informative way to look at a region’s development patterns.

Figure VI-6 shows that, in the AMPA, the number of developed acres is expected to growth by 41 percent, while housing is expected to increase by 45 percent over the life of the Plan. Therefore, development in 2025 should be slightly denser than in 2000.

**Job to Housing ratio**

The job to housing ratio affects travel as commuting distances are likely to be shorter if an adequate supply of jobs is located near housing. Table VI-1 shows the 4-county MRCOG area (consisting of Bernalillo, Sandoval, Torrance, and Valencia Counties), the AMPA, and various specific areas and the corresponding job to housing ratios in 2000 and 2025.

Table VI-1 Job to Housing Ratio in Various Areas, 2000 and 2025

	2000	2025
4-county Region	1.27	1.17
AMPA <sup>2</sup>	1.39	1.32
Rio Rancho, Corrales, Town of Bernalillo	0.89	0.84
Westside, North of I-40	0.69	0.82
Southwest Mesa	0.50	0.63
East Mountains	0.39	0.50
Valencia County	0.60	0.69

The 4-county region represents a reference point for what might be considered an “ideal” job to housing ratio. Ratios higher or lower than the regional average increase the potential for longer trips. The fact

that the AMPA ratio is higher than the 4-county ratio indicates that many residents of the 4-county area commute into the AMPA for jobs, shopping and services. Table VI-1 shows that housing is expected to grow faster than jobs in the 4-county area, the AMPA, Rio Rancho, Corrales and the Town of Bernalillo between 2000 and 2025. Also, the Southwest Mesa and the remaining areas are expected to have a more balanced jobs to housing ratio in 2025, although Valencia County's 2025 ratio of 0.69 indicates that this area will continue to export labor to the AMPA.

### **Trip Length**

Mixed use developments are beneficial to urban form because they help reduce travel times and distances. Although several mixed use developments are expected to sprout up between now and 2025, the shorter trip lengths that should result are offset by a growing population that is moving outward from the urban center. The average trip length for all trip purposes is projected to increase by 16 percent between 2000 and 2025, from 6.8 to 7.9 miles.

## **4. Multimodal and Intermodal Integration**

"To provide an integrated multimodal transportation system that increases accessibility and mobility options for goods and people of all incomes, ages and physical conditions, and enhances the connectivity of all the elements of the transportation network: roadways, transit facilities, bikeway facilities and pedestrian facilities."

### **Mode Split**

As mentioned above, the mode split is projected to remain relatively constant over the next 23 years. MRCOG's current modeling environment does not allow us to project biking and walking for 2025, but Census data indicates that these modes currently represent about 3.5 percent of all commutes in the AMPA. Despite the dominance of personal vehicles in the AMPA, alternative transportation can be made more attractive.

An important step towards multimodal integration is making bike, pedestrian, and transit facilities more easily accessible. These effects are discussed below. In addition, the introduction of managed lanes in this MTP provides a context for exploring the potential effects High Occupancy Vehicle lanes may have on mode share.

### **Accessibility of Transit**

MRCOG's transportation accessibility model (TRAM) was used to see

if the 2025 transit network improved accessibility of important activity centers like employment centers, commercial centers, schools, and hospitals. The analysis took into account the service area (where the bus runs), the headways (how frequent the bus runs), and the connectivity between bus routes (transfer times).<sup>3</sup>

Table VI-2 shows access to premium bus stops on routes that operate with 10 minute headways. The 2000 transit network includes only one such route, whereas the 2025 transit network includes four.

The number of people living within a five minute walk to a premium bus service is projected to increase by 20,500 people in 2025, from 2.9 percent of the population in 2000, to 4.5 percent in 2025. The number of people living within a 10 minute walk to premium bus service is expected to increase by 83,800 people. By 2025, it is projected that at least one of every four people in the AMPA will live within a 15 minute walk to a premium bus route.

The total number and percentage of jobs accessible by premium transit service is expected to increase significantly. The percentage of AMPA employment within a 10 minute walk to premium bus routes doubles by 2025, reaching nearly a fourth of all jobs in 2025. Of all jobs accessible by premium transit in 2002 and 2025, 65 percent are service related, due, among other things, to the geographic locations of these jobs.

An analysis of 130 AMPA public schools (elementary, middle, and high schools) shows that the increase in premium bus routes leads to greater accessibility. Currently, 17 APS schools are within a 15 minute walk to premium bus routes. In 2025, this number will nearly double to a total of 41 schools.

#### **Accessibility of Bikeway/Pedestrian Facilities**

A similar analysis was performed to evaluate the accessibility of bike lanes and bike/pedestrian trails/paths for the 2002 and 2025 bicycle networks. Table VI-3 shows how accessible premium bicycle facilities (off-road bike and pedestrian trails and paths or on-road bike lanes that are specifically designated for bike use) are to people, jobs, and schools.<sup>4</sup>

The number of people living or working within a five minute bike ride to a premium bicycle facility is expected to increase by 200,600

Table VI-2 AMPA Accessibility to Premium Transit Service, 2002 and 2025

	2002 Transit Network	% of AMPA Total	2025 Transit Network	% of AMPA Total
<b>Population *</b>	622,674	100	865,341	100
Within 5 minute walk from premium bus service	18,104	2.9	38,681	4.5
Within 10 minute walk from premium bus service	53,033	8.5	110,518	12.8
Within 15 minute walk from premium bus service	84,840	13.6	175,776	20.3
<b>Employment **</b>	367,780	100	507,353	100
	B (113,586)		B (122,067)	
	R (66,539)		R (84,398)	
	S (187,655)		S (300,888)	
Within 5 minute walk from premium bus service	16,879	4.6	54,957	10.8
	B (2,546)		B (8,315)	
	R (3,228)		R (8,261)	
	S (11,106)		S (38,381)	
Within 10 minute walk from premium bus service	47,557	12.9	122,716	24.2
	B (7,123)		B (19,483)	
	R (8,167)		R (21,149)	
	S (32,268)		S (82,084)	
Within 15 minute walk from premium bus service	67,689	18.4	177,509	35.0
	B (9,855)		B (30,743)	
	R (11,341)		R (30,847)	
	S (46,494)		S (115,919)	
<b>Albuquerque Public Schools ***</b>	130	100	130	100
Educational Institution (Elementary and High Schools) within a 5, 10, or 15 minute walk from premium bus service	5 minute: 0	0.0	5 minute: 3	2.3
	10 minute: 9	6.9	10 minute: 22	16.9
	15 minute: 17	13.1	15 minute: 41	31.5

\*Population and Employment totals vary slightly from MRCOG official totals due to minor geographical boundary variations.

\*\*Employment is broken into three categories: Basic (B) includes agriculture, mining, construction, manufacturing, transportation, communication, and utilities, wholesale, and military Service (S) includes fire, services, and civilian government. Retail (R) includes retail.

\*\*\*While the number of schools is projected to increase in MRCOG's 2025 dataset, this number is held constant for the purposes of this analysis. Therefore, the 2025 column demonstrates 2025 transit network access to 2002 schools. In addition, Albuquerque Public Schools are presented as opposed to all AMPA schools because bus service is only available to the City of Albuquerque.

and 148,500, respectively. This increase is projected to be 200,400 and 115,300 respectively for a 10 minute bicycle ride to such a facility. However, as a percentage of the total AMPA, accessibility is expected to decrease, as a larger portion of the population growth is expected to occur on the edge of the developed area where the system is less fully developed.

There is a significant increase in access to premium bicycling facilities expected for schools. The number of schools located within a 5 minute bike ride from a bike trail/path and lane is projected to increase from 83 in 2000 to 116 by 2025. By 2025, nearly 80 percent of the existing schools are projected to be within a 5 minute bike ride from a bi-

Table VI-3 AMPA Accessibility to Bike Trails/Paths and Lanes, 2002 and 2025<sup>5</sup>

	2002 Bicycle Network	% of AMPA Total	2025 Bicycle Network	% of AMPA Total
<b>Population*</b>	622,674	100	865,341	100
Within a 5 minute bike ride from a trail/path/lane	417,294	67.0	618,895	71.5
Within a 10 minute bike ride from a trail/path/lane	539,178	86.6	741,648	85.7
Within a 15 minute bike ride from a trail/path/lane	569,504	91.5	769,661	88.9
<b>Employment**</b>	367,780	100	507,353	100
	B (113,586)		B (122,067)	
	R (66,539)		R (84,398)	
	S (187,655)		S (300,888)	
Within a 5 minute bike ride from a trail/path/lane	216,635	59.0	365,228	72.0
	B (48,799)		B (70,224)	
	R (47,432)		R (64,966)	
	S (120,404)		S (230,037)	
Within a 10 minute bike ride from a trail/path/lane	318,632	86.6	433,942	85.5
	B (81,311)		B (90,741)	
	R (63,117)		R (76,756)	
	S (174,204)		S (266,443)	
Within a 15 minute bike ride from a trail/path/lane	336,018	91.4	448,687	88.4
	B (90,868)		B (96,241)	
	R (64,861)		R (78,345)	
	S (180,290)		S (274,099)	
<b>AMPA Public Schools ***</b>	145	100	145	100
Educational Institution (Elementary and High Schools)	5 minute: 83	57.2	5 minute: 116	80.0
within a 5, 10, or 15 minute bike ride from a trail/path/lane	10 minute: 126	86.9	10 minute: 138	95.2
	15 minute: 137	94.5	15 minute: 140	96.5

\*Population and Employment totals vary slightly from MRCOG "official" totals due to minor geographical boundary variations.

\*\*Basic (B) includes agriculture, mining, construction, manufacturing, transportation, communication and utilities, wholesale, and military. Service (S) includes fire, services, and civilian government. Retail (R) includes retail.

\*\*\*While the number of schools is projected to increase in MRCOG's 2025 dataset, this number is held constant for the purposes of this analysis. Therefore, the 2025 column demonstrates 2025 bike network access to 2002 public schools.

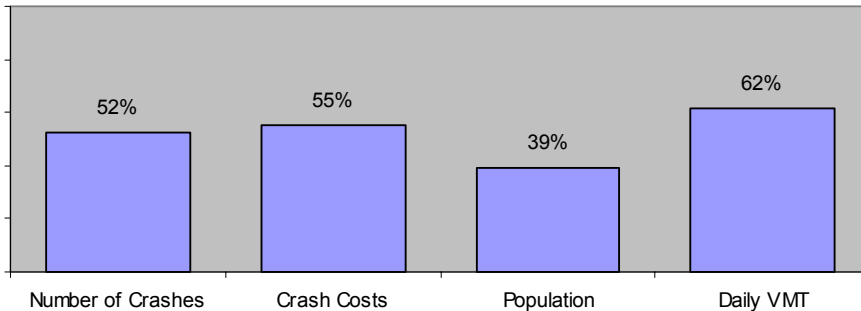
cycle facility.

## Intermodal Integration

Another way to promote alternative modes of transportation is to integrate bike, pedestrian, and transit facilities into new roadway designs whenever possible. Of the 125 roadway projects listed in this Plan that do not involve interstates and interchanges, 69 are accompanied by a bicycle facility. And although the MTP does not specifically deal with the provision of pedestrian facilities such as sidewalks and crosswalks, there are an additional 95.7 miles of recreational trails to be shared by bicyclists and pedestrians included in this Plan. The region is presently limited in its intermodal facilities. Trucking, air, and rail transport are key to the movement of freight and cargo.

Efforts to implement managed lanes and ITS in the region are expected to be extremely beneficial to managing truck traffic on this region's roadways. A preliminary analysis shows that the provision of managed lanes could result in increases in travel time reliability and a reduction in travel time.

*Figure VI-7 AMPA Growth in Crashes, Crash Costs, Population, and Daily VMT, 2000 – 2025*



## 5. Safe, Efficient, and Reliable System

"To increase the safety, reliability, and dependability of the transportation system for all travelers, and goods, including those traveling by foot, bike, bus, train, truck, and auto."

### Crashes

In 2000, New Mexico outpaced the nation in vehicle-related crashes and fatalities, and Bernalillo County led the state in terms of crash rates. The six intersections with the highest fatal and injury levels in the state lie within the AMPA. Therefore, it is critical that this Plan and all transportation projects planned in the AMPA are developed with safety as a priority.

Figure VI-7 shows that the projected growth in crashes is higher than the expected increase in population, but slightly lower than the increase in VMT. Given current trends, it is estimated that the number of annual crashes on non-state roads will increase from 12,700 in 2000 to 19,400 in 2025. The annual costs associated with these crashes are expected to rise from \$550 million in 2000 to \$847 million in 2025. It is important to note that these projections do not include any safety benefits associated with the implementation of traffic management strategies such as Intelligent Transportation Systems (ITS).

### Lane Reductions

Included in the 2025 MTP are several projects that propose lane re-

ductions. Projects such as the two-way lane conversion and lane reductions Downtown, and the reduction of Lead and Coal Avenues to two lanes, will serve to slow traffic without significantly affecting movement (present and future projections show the available capacity to do so) thus increasing the safety of these facilities.

### **Managed Lanes**

Managed lane activities included in this MTP will also aid to increase the efficiency and reliability of the transportation system. Delay and safety concerns arise when different types of vehicles share the same high speed facilities. Dedicated certain traffic lanes to specific uses will reduce these concerns. A preliminary effort to model managed lanes in the AMPA found that they would be much used and that more consistent traffic volumes on the interstates would result.

## **6. System and Demand Management**

"To improve the movement of people and goods by promoting ways to manage the demand on the transportation system as well as ways to enhance its efficiency."

### **TDM**

Transportation Demand Management (TDM) projects aim to change travel behavior in order to maximize use of the existing transportation system as well as efficiency of movement. While there is a current budget of \$750,000 per year for TDM programs, this MTP programs additional resources for TDM. TDM strategies are particularly attractive because in a financially constrained MTP, the costs associated with beneficial results are a fraction of the cost of building new or expanded roadways.

### **ITS**

Another such effort, ITS, is designed to provide reliable, up-to-date information to those who use and operate the transportation system. For the first time, the MTP has programmed ITS into its financial plan. Because this is a relatively new effort, ways to measure potential impacts are still in the formation process. However, statistics from other urban areas indicate that ITS investments have one of the highest benefit-to-cost ratios of any transportation related investment. These benefits are seen in increased transportation safety, efficiency, and security. A total of \$125 million is designated for ITS in this MTP.

The concept of managed lanes, which needs to be more fully devel-

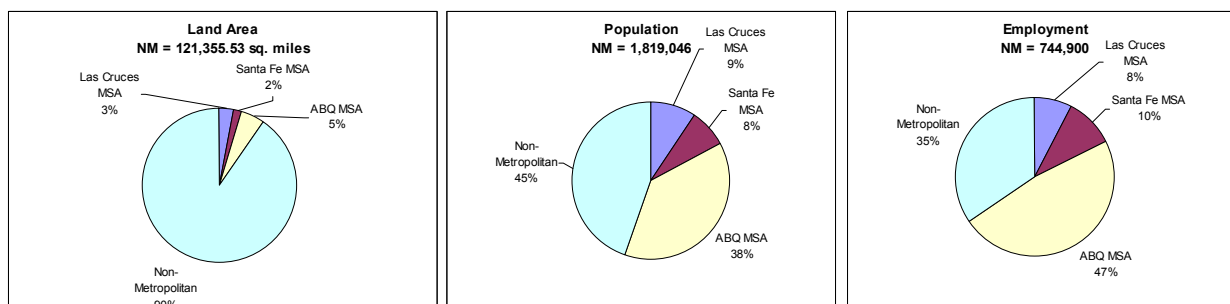
oped, could play a role in system management by providing travel time reliability to certain market segments (HOV, trucks, through-trips) and help preserve the function of higher-type facilities.

Together, ITS and TDM represent 5.19 percent of the total MTP budget, but their contributions to our transportation system may be far greater. Map V-6 in Section V C3 shows that, even during peak travel periods, there is excess capacity on the majority of the region's existing roadways. An investment in both TDM and ITS will allow the region to better use this existing capacity.

## 7. Economic Development

"To support the economy of the metropolitan area by developing an efficient, effective and attractive transportation system that strengthens global competitiveness, productivity, and efficiency."

*Figure VI-8 Share of Metropolitan Areas to Non-Metropolitan Areas – Land Area, Population, Employment*



Metropolitan areas throughout the country are often the location of choice for many businesses. New Mexico is no different. While metropolitan areas occupy 10 percent of New Mexico's total land area, they are home to 55 percent of the State's population and 65 percent of the State's employment.<sup>6</sup> Figure VI-8 shows how Metropolitan areas compare to non-Metropolitan areas in terms of land area, population, and employment distribution in 2000.<sup>7</sup>

## System Preservation

As the economic engine of New Mexico, it is critical that the AMPA's transportation systems be maintained and upgraded as necessary. This MTP demonstrates a financial commitment to existing facilities, dedicating over 50 percent of its total budget to roadway maintenance and transit, and 72 percent of its roadway funds towards existing roadways.

**Improving Opportunities**

In addition, a number of projects included in this MTP are specifically directed at improving opportunities for economic development. For example, the road serving Double Eagle II will be widened from 2 to 4 lanes and its interchange will be reconstructed at I-40 to support the 2,000 new jobs expected from the establishment of Eclipse Aviation and other economic development initiatives along that road and adjacent to Double Eagle II Airport. The Louisiana/I-40 interchange reconstruction and construction of the last segment of the Uptown Loop road are critical elements to improving circulation and access to the Uptown area. The Gibson Extension included in the MTP will provide improved access to the Kirtland Air Force Base Complex, the Sandia Science and Industrial Park, and other currently vacant parcels adjacent to the Kirtland Complex.

Also, N.M. 528, a primary employment corridor in Rio Rancho, is scheduled for further widening to 6 lanes. This will provide new capacity for expanded business opportunities in this area. Paseo del Volcan is programmed to be constructed from U.S. 550 to Unser Boulevard, providing access to two very large tracts of land which are considered prime real estate for employment and housing related ventures. Mesa Del Sol, a development that is projected to add nearly 9,000 jobs to the AMPA by 2025, is programmed in this MTP for new infrastructure, including an interchange with I-25, and the extension of University Boulevard.

The two-way conversion of Downtown streets is designed to improve access to businesses and make streets more pedestrian friendly, and is considered a key element of the continuing effort to revitalize Downtown. The reconstruction of major portions of Isleta Boulevard in the South Valley and Fourth Street in the North Valley is also considered crucial to the revitalization of these two historic corridors.

In addition to quality transportation systems, good access to employment areas is important in terms of the mobility of consumers, employees, and the transfer of goods. Presently, 31 percent of the AMPA's jobs are located within ½ mile of an interstate interchange and 84 percent of all jobs are located within ½ mile of a principal arterial or expressway. In 2025 these figures are expected to remain essentially the same. While 12 percent of the region's land area was located within ½ mile of a principal arterial, expressway or interstate in

2000, this figure is expected to increase to 15 percent by 2025. This implies that future businesses will have more opportunities to locate near a major transportation corridor.

Enhancements to the premium transit system are also anticipated to contribute to the economic welfare of the region. As discussed above, the number of people living or working within a five or ten minute walk to premium transit is anticipated to increase significantly.

The investments included in this MTP for transit, bike lanes and pedestrian trails, ITS, enhancements, and targeted areas for revitalization (like Downtown) will place this community in a better position to attract large employers. If several of the key projects identified as placeholders in this Plan are also implemented, the relative position of this community (from a competitive perspective) should improve even more.

### **Transportation Costs**

The amount of money a household spends on transportation each day impacts the economic well-being of households, and in turn, the regional economy: the more a household spends on transportation, the less its expendable income. In 2000, the average household spent about \$22 per day on transportation related items such as parking, fuel, vehicle maintenance and repair, crash costs, and rental expenditures. By 2025 that number is projected to increase to \$25 per day. If external costs such as road taxes, environmental impacts and congestion are figured into the equation, 2000 average household costs are estimated to be \$40 a day while 2025 costs are about \$44 per day.<sup>8</sup>

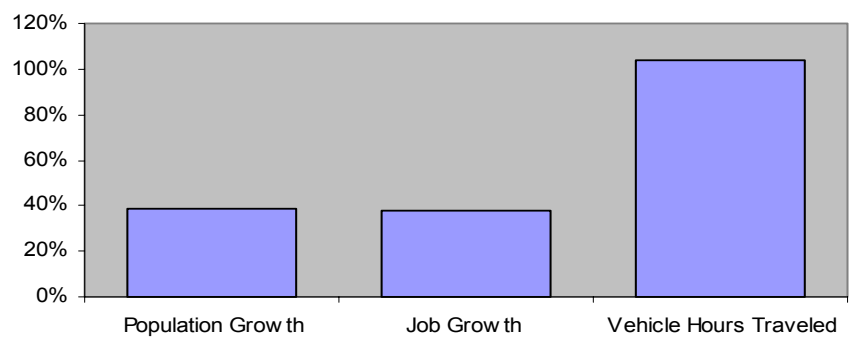
### **Travel Time**

Travel times are another good way to look at ease of mobility in a region. With more people and jobs, it is not surprising that travel times are expected to increase over time. Figure VI-9 shows growth in daily vehicle hours traveled compared to job and population growth.

In the AMPA, population is expected to grow by 39 percent. Employment will rise 38 percent while the total number of daily vehicle hours traveled (VHT) will increase 101 percent by 2025.<sup>9</sup> This means that the average amount of time a person will spend in their automobile per day is projected to increase from 36 minutes today to 52 minutes per day in 2025.

The increase in travel time in Figure VI-9 is dramatic compared to other growth rates. This is because population and job growth increase the demands on the region’s corridors, particularly during peak hours. This increases congestion and causes travel times to rise. Increases in travel times directly increase transportation related expenses. The strategies deployed in this MTP to address congestion (TDM/ITS/Premium Transit and Roadway Improvements) are aimed at managing this situation and ensuring that the transportation system in 2025 will still support a viable regional economy.

*Figure VI-9 AMPA Growth in Vehicle Hours Traveled, Jobs, and Population, 2000 – 2025*



## B. Environmental Justice

Federal regulations require that community impact considerations be included in the transportation planning decision making process.<sup>10</sup> This means that an analysis showing the way proposed transportation projects impact population groups, especially traditionally underserved and minority groups, has to be completed to determine whether any one group is disproportionately impacted. This section represents MRCOG's first effort in doing such an analysis for an MTP.

MRCOG has gathered data, developed analytical tools, and defined a methodology<sup>11</sup> for analyzing the benefits and burdens of transportation actions. In addition, MRCOG has enhanced its public involvement process to guarantee early access to transportation planning information and to facilitate opportunities for the public to participate in the decision making process.

### 1. AMPA Demographic Profile<sup>12</sup>

As shown in Table VI-4, minorities make up 50.5 percent of the AMPA's total population. This percentage is expected to increase to 62.3 in 2025. The AMPA's total population is projected to grow by 39 percent during the life of the Plan while the minority population is projected to grow by 72 percent. Within the minority population, the Hispanic and Non-White Not Hispanic groups are projected to grow by 62 and 113 percent respectively.



*People walking along Central Avenue in Downtown Albuquerque.*

*Table VI-4 AMPA Population and Minority Population, 2000 and 2025<sup>13</sup>*

Year	Total Population	Minority Population	Percent Minority	Hispanic Origin	Non-White Not Hispanic
2000	622,674	314,472	50.5	255,337	59,135
2025	865,341	539,452	62.3	413,612	125,840

*Sources: U.S Bureau of the Census, BBER, and MRCOG*

Based on historical trends and MRCOG assumptions (see *Technical Documentation for the 2025 MTP*), the AMPA is forecast to have a low-income population of 279,197 people by the year 2025: over 32 percent of the total population. Currently, 38 percent of the population is low income.



*The National Hispanic Cultural Center in Albuquerque's South Valley is a testimony to our rich cultural heritage.*

## **2. Community Impact Analysis**

It is important for transportation planning agencies to know how accessible certain destinations are to residents. Determining the accessibility of employment areas, educational institutions, and hospitals by various modes of transportation provides insights about how well the transportation system serves the community.

This section enhances preceding accessibility analyses (see Section VI A) by addressing the relationship between the 2025 transportation system and the AMPA's low income and high minority population.

Maps VI-1 and VI-2 (on pages VI-20 and VI-21) show that a number of new bicycle and roadway projects are located in areas populated by low income and high minority groups. Table VI-5 shows how accessible premium bicycle facilities and transit routes are to the AMPA's minority and low-income population groups. For each group, the number of people residing within a five, ten or 15 minute walk of a premium transit facility is shown, as well as the number of people residing within a five, ten, or 15 minute bike ride to a premium bicycle facility. The table shows that:

- Approximately 3 percent of the minority population resides within a five minute walk to premium transit. This percentage is expected to increase to 4.3 in 2025. A 15 minute walk captures 19.3 percent of the minority population in 2025, up from 14 percent today.
- 64.5 percent of the AMPA's minority population resides within a 5 minute bike ride to a bike trail/path or lane. This percentage is projected to increase to 70.7 percent by 2025.
- The percentage of the AMPA's low income population residing within a five minute walk to premium bus service is expected to increase from 6.5 percent today to 14.6 percent in 2025.
- Approximately 80 percent of the low income population is located within a 10 minute bike ride to a premium bicycle facility in 2000. This percentage will increase to 90.9 in 2025.

People under 16 and over 65 often depend on others for vehicular transportation. Young people can sometimes use alternatives like walking or biking to reach locations such as schools, but options are more limited for people 65 years old and over. This is why accessibility to public transit is so important to this age group.

**Table VI-5 Minority and Low-Income Population Accessibility to Premium Bicycle and Transit Facilities, 2000 and 2025**

AMPA	Existing Network		2025 Network	
	Premium Bicycle Facilities	Premium Transit Routes	Premium Bicycle Facilities	Premium Transit Routes
Non Minority Population (308,202) in 2000 (325,889) in 2025	5' (69.5) 10' (87.7) 15' (92.0)	5' (2.4) 10' (6.6) 15' (10.5)	5' (72.8) 10' (86.7) 15' (89.9)	5' (3.5) 10' (9.6) 15' (15.1)
Minority Population (314,472) in 2000 (539,452) in 2025	5' (64.5) 10' (85.5) 15' (90.9)	5' (3.4) 10' (10.4) 15' (16.7)	5' (70.7) 10' (85.0) 15' (88.2)	5' (5.1) 10' (14.7) 15' (23.4)
Low Income Population (236,485) in 2000 (279,197) in 2025	5' (62.7) 10' (84.5) 15' (88.7)	5' (6.5) 10' (18.9) 15' (28.6)	5' (77.6) 10' (90.9) 15' (92.4)	5' (14.6) 10' (35.2) 15' (50.8)

Source: 2000 Census Data and MRCOG projections

5' = five minutes; 10' = ten minutes; and 15' = fifteen minute bike ride in the case of bicycle facilities and walk in the case of transit routes.

**Table VI-6 Population by Age Group Accessibility to Premium Bicycle and Transit Facilities, 2000 and 2025**

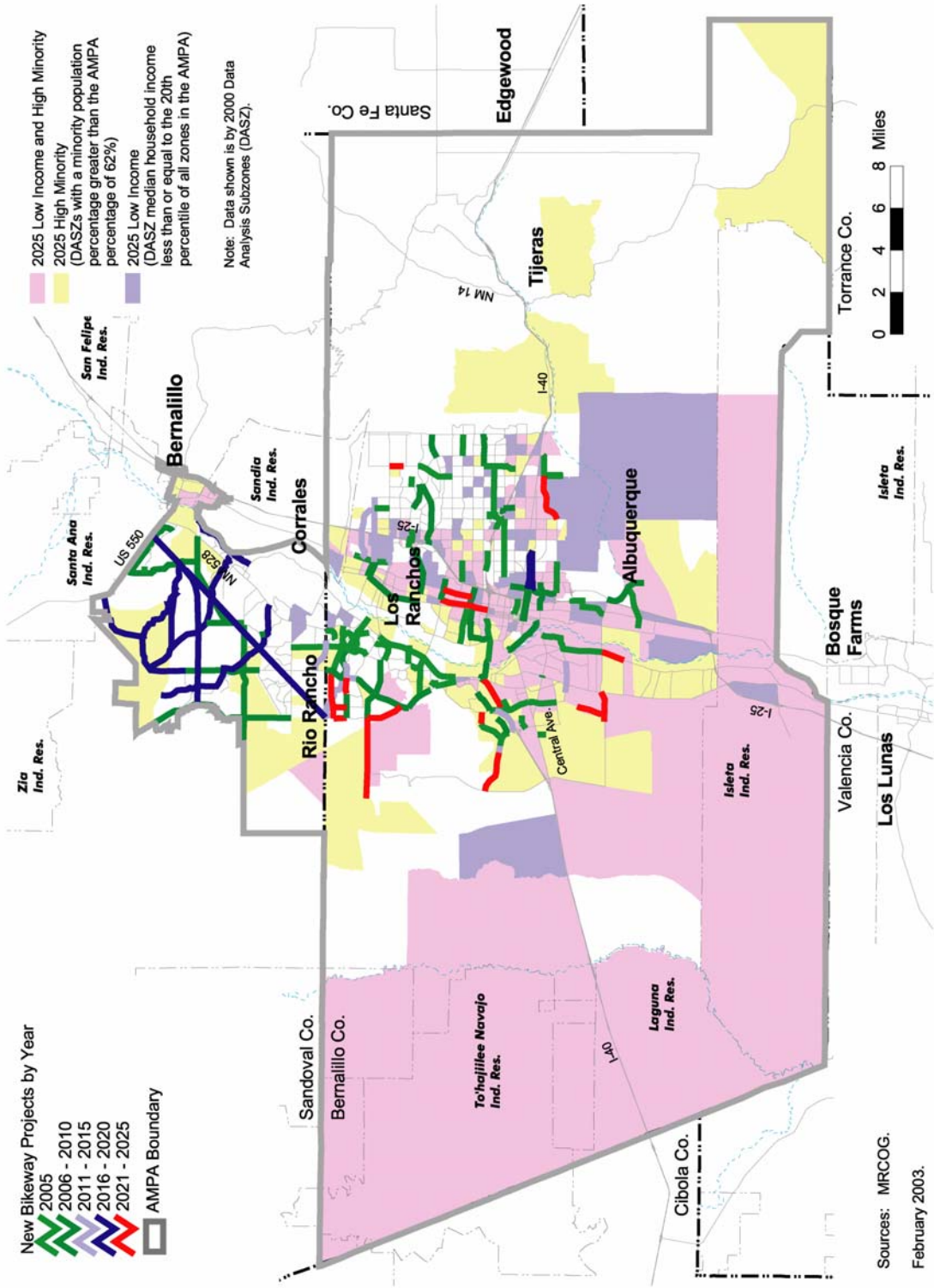
AMPA	Existing Network		2025 Network	
	Premium Bicycle Facilities	Premium Transit Routes	Premium Bicycle Facilities	Premium Transit Routes
Population Under 16 (141976) in 2000 (157116) in 2025	5' (65.0) 10' (84.7) 15' (90.3)	5' (2.4) 10' (7.6) 15' (12.6)	5' (70.3) 10' (84.8) 15' (88.1)	5' (4.1) 10' (12.3) 15' (20.0)
Population 16 - 64 (409121) in 2000 (535344) in 2025	5' (66.8) 10' (86.5) 15' (91.3)	5' (3.0) 10' (8.8) 15' (14.0)	5' (71.0) 10' (85.2) 15' (88.5)	5' (4.3) 10' (12.2) 15' (19.3)
Population 65 and over (71577) in 2000 (172882) in 2025	5' (72.4) 10' (90.7) 15' (94.5)	5' (3.1) 10' (8.6) 15' (13.7)	5' (74.3) 10' (88.2) 15' (91.0)	5' (5.3) 10' (14.9) 15' (23.6)

Source: 2000 Census Data and MRCOG projections.

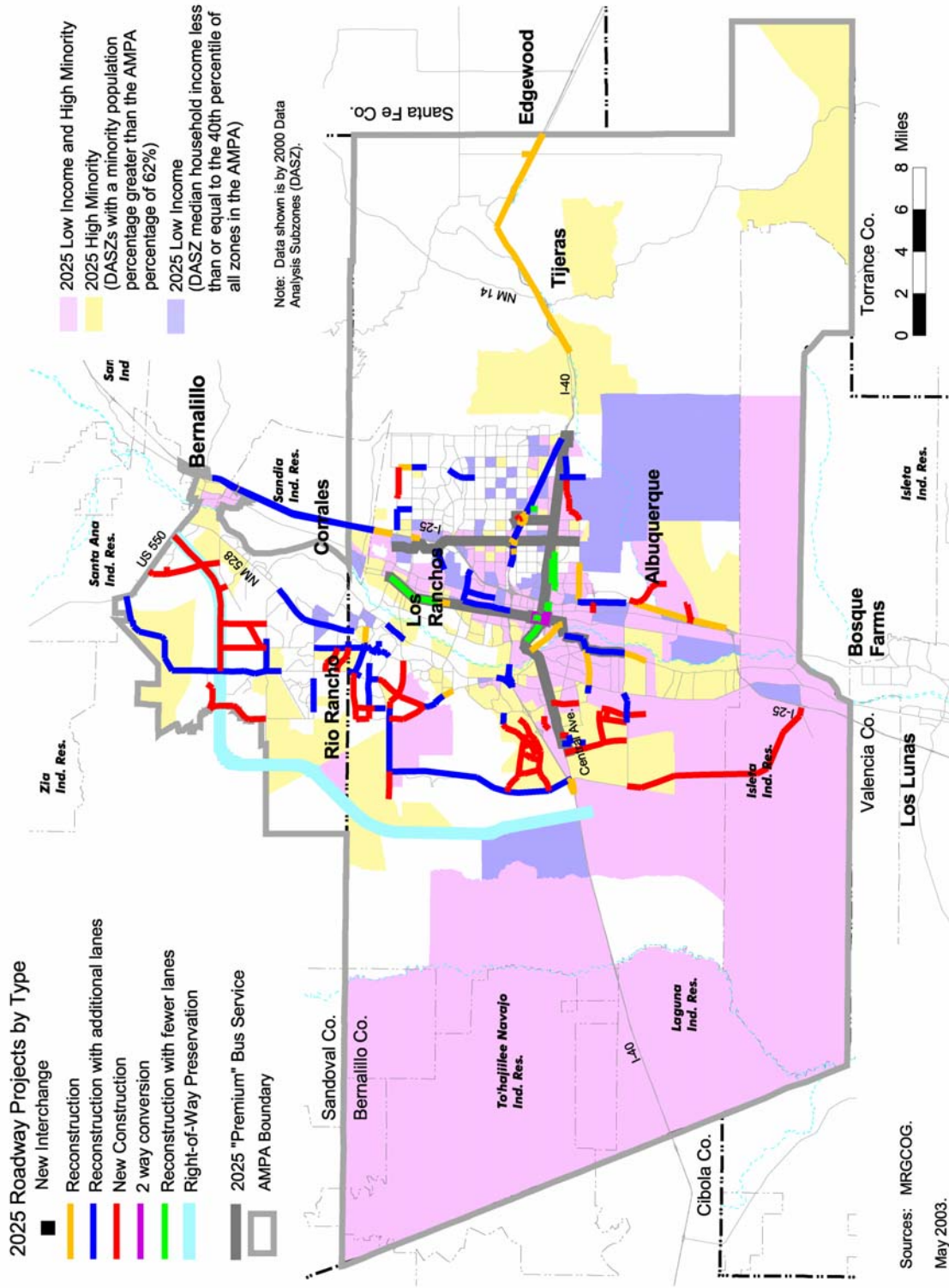
5' = five minutes; 10' = ten minutes; and 15' = fifteen minute bike ride in the case of bicycle facilities and walk in the case of transit routes.

Table VI-6 shows that more than 80 percent of the population under 16 is able to access a premium bicycle facility by a 10 minute bike ride in 2000 and 2025. Approximately 7.6 percent of this same age group resides within a 10 minute walk to a premium transit bus stop. This percentage is expected to increase to 12.3 percent in 2025. A 15 minute walk currently provides access to 12.6 percent of people under 16. This is expected to increase to 20 percent by 2025.

Map VI-1 AMPA 2025 Minority and Low Income Population, and 2025 Bikeway Network



Map VI-2 AMPA 2025 Minority and Low Income Population, and 2025 Roadway and Premium Transit Networks



Currently, only 8.6 percent of people 65 and over reside within a 10 walk of premium transit. This percentage is expected to increase to 14.9 percent in 2025. A similar analysis shows that 23.6 of this age group is expected to live a 15 minute walk away from a premium transit facility in the year 2025. Currently, this percentage is 13.7.

Table VI-7 shows the number of common destinations (in parentheses) that can be reached by taking a bus and then walking for 5, 10 or 15 minutes using the existing or 2025 transit system. It shows that:

- The number of community centers located within a 10 minute walk of premium transit will triple by 2025.
- The number of day care centers that can be reached by walking for 5, 10, or 15 minutes from a premium transit facility will more than double by 2025. Day care centers are an important destination for families with children.
- Access to libraries is expected to improve slightly by 2025.
- Recreational activities are important for the quality of life in any community. Assuming the number and geographic distribution of recreational facilities will remain the same, the number of these facilities that are accessible by premium transit will increase by 46 percent by 2025.

**Table VI-7 Activity Centers Walking Distance from Premium Transit, 2000 and 2025**

	<b>Community Centers*</b>	<b>Day Care Centers</b>	<b>Libraries</b>	<b>Recreational Facilities**</b>
Existing Transit Service	5' (1) 10' (4) 15' (8)	5' (13) 10' (30) 15' (44)	5' (2) 10' (3) 15' (5)	5' (3) 10' (14) 15' (31)
2025 Transit Service	5' (4) 10' (12) 15' (16)	5' (31) 10' (58) 15' (89)	5' (4) 10' (5) 15' (10)	5' (8) 10' (29) 15' (58)

\*Community Centers include senior centers, community centers, and multi-service centers.

\*\*Recreational facilities include public sport fields (basketball, softball, swimming pools, tennis courts, community centers with indoor sports facilities or recreational activities, senior centers with sports facilities or recreational activities, museums, and public parks.)

These results indicate that the impact of the 2025 transportation projects on the minority and low income population is not much different than the impact of these projects on the AMPA's population as a whole.

### 3. Public Involvement

#### The Process

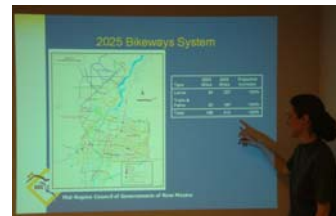
Public involvement is a critical element in developing transportation plans and programs and MRCOG is committed to a proactive, inclusive, innovative public involvement process. During development of the 2025 MTP, a number of opportunities for public input were provided. These opportunities occurred both prior to development of the draft document and during formal review of the draft document prior to final approval.

The public involvement process for the 2025 MTP was initiated in Fall 1999 with a stratified-sample telephone survey of over 600 respondents and a set of three citizen focus groups. Spokespersons for the traditionally underserved were invited to assist with developing a profile for the persons to be included in the focus groups.<sup>14</sup> The results of this work were important to identifying the draft goals for the 2025 MTP (see Section IV), citizen concerns about transportation in the urban area, and other information.

The 2025 MTP public involvement process continued with establishment of the MTP Work Group. The MTP Work Group included representatives from MRCOG's Public Involvement Committee (PIC). Representatives from 1000 Friends of New Mexico and the Sierra Club attended the Work Group meetings in an advisory capacity.

Throughout the 2025 MTP development process, MRCOG staff created opportunities for formal public input as well as the more informal input received through the 2025 MTP Work Group. Formal public involvement events included MTP open houses in Spring 2000 to gather input on the proposed goals and objectives and the open houses in Spring 2001 to request assistance with the problem identification process. A detailed description of MRCOG's efforts to inform citizens about these events is provided in *Development and Review Process Supplement for the 2025 MTP*.

MRCOG staff provided presentations about the MTP development effort at public meetings as well as to the MRCOG Board of Directors and the Albuquerque/Bernalillo County Air Quality Control Board (Air Board). Staff also provided presentations to groups such as the Rio Rancho Kiwanis Club, the West Side Planning Council, the Transit Advisory Board, and Supporters of the Planned Growth Strategy.



*Presentations about the 2025 MTP were given to various community groups.*

In addition, staff developed a series of newspaper articles published in the Albuquerque Tribune's Insight and Opinions section with the intent of increasing understanding of transportation planning in general and of increasing awareness of the specific opportunities for public input in particular.<sup>15</sup> Formal meeting announcements as well as the draft 2025 MTP document were posted on MRCOG's website throughout the process.

For much of the 2025 MTP development process, notification about formal public input opportunities took place by distributing brochures and displaying advertisements and announcements via e-mail and MRCOG's web site. However, attendance at formal public meetings was relatively low and consisted mostly of representatives from special interest groups (e.g. bicycling community, no-growth advocates). To expand the audience for discussions about planning in general and the 2025 MTP in particular, MRCOG developed a more strategic approach to get the public involved. This approach took the form of presentations to small groups who were either contacted by MRCOG staff or who requested presentations following announcements at meetings. This approach was taken throughout the final public review period for the draft 2025 MTP (March 3 through April 3, 2003) and provided opportunities for input into the process to groups that might otherwise be disadvantaged. Reducing group sizes and sending MRCOG staff to citizens, rather than requiring citizens to attend large public meetings in less-comfortable environments improved communication tremendously. A list of the presentations provided is shown in Table VI-8.

*Table VI-8 2025 MTP Public Review Group Presentations*

Presentation	Location	Date & Time
Planned Growth Strategy Task Force	Montezuma Elementary School	February 25, 7:00 p.m.
Economic Forum	Sheraton, Old Town	March 12, 7:00 a.m.
South Valley Coalition of Neighborhoods	Sheriff Substation	March 13, 6:30 p.m.
Enchanted Hills Neighborhood Association	Department of Public Safety	March 13, 7:00 p.m.
North Valley Coalition of Neighborhoods	Los Griegos Community Center	March 19, 7:00 p.m.
Westside Coalition of Neighborhood Associations	Johnson Middle School	April 2, 7:00 p.m.

In addition to these presentations, two open houses were scheduled. The first took place in the City of Rio Rancho Chambers on March 12 from 4:00 p.m. to 6:30 p.m. The second took place on April 3 from

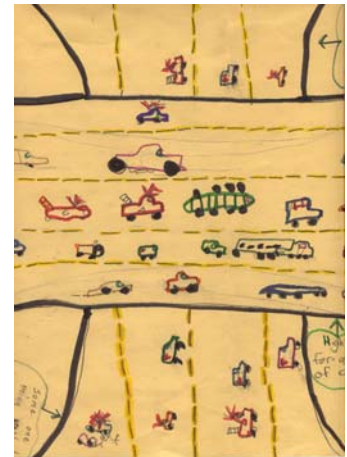
4:00 p.m. to 6:00 p.m. at MRCOG immediately preceding the Public Involvement Committee's (PIC) regularly scheduled meeting. At this meeting, the PIC issued a recommendation to the Transportation Coordinating Committee (TCC) and Metropolitan Transportation Board (MTB) regarding the draft 2025 MTP and transportation projects to be included in the 2016 – 2025 timeframe (see section V B3).

The TCC met the following day and issued their own recommendation. Next, the MTB reviewed these and made a final decision about the 2025 MTP. The public was encouraged to attend and provide comments at each of these meetings.

Comments received during the public review period centered on the following issues:

- General Concerns
  - Consideration of major plans.
  - Local commitment to implementation.
  - Too conservative.
  - Improve and expand transit.
  - Increase safety for alternative modes of transportation (especially biking and walking).
  - Traffic volumes and speeds in residential areas.
- Specific Projects
  - I-40/Coors timing and termini.
  - Paseo del Volcan alignment.
  - 4th Street (widening/right-of-way).
  - Southwest Transportation Corridor need and community impacts.

MRCOG staff summarized the comments received and provided this information to the PIC, TCC, and MTB as part of the decision-making process. In response to these concerns, the MTB passed a resolution requesting the New Mexico State Highway and Transportation Department to extend the termini for the I-40/Coors interchange project and the Transportation Program Task Group is currently identifying potential funding sources. Concerns related to the Southwest Transportation Corridor were noted and, while this project was included in the final 2025 MTP, the Plan includes a discussion of their impacts and the steps the lead agencies will need to take to address these concerns (see below). The concerns related to the Fourth Street project are specific to project implementation and will be provided to the project sponsor.



*The 2025 MTP process also involved the youngest members of our society. This is the future of our region's transportation system according to Molly, Cecilia, Andrea, Jake, Julio, and Irene at Montezuma Elementary, January 2000.*



Angelic, Brandon, Emma, Freddie, and Roberto of Montezuma Elementary had very multimodal ideas and included electric cars, helicopters, subways, planes, horses, and even the tram in our transportation future.

Letters were sent to each person who provided comments along with a name and address. These letters describe how that individual's comments were addressed during the MTB's deliberation process and express MRCOG's thanks for their participation. Copies of the letters are included in *Development and Review Process Supplement to the 2025 MTP*.

### **Concluding Remarks**

MRCOG has taken a proactive approach to implementing the three basic principles of Environmental Justice in the AMPA:

1. To ensure public involvement of low-income and minority groups in decision making.
2. To prevent, minimize, or mitigate "disproportionately high and adverse" impacts of decisions on low-income and minority groups.
3. To assure that low-income and minority groups receive their fair share of benefits.

Using technical analyses as well as the results of the public involvement process, MRCOG produced all relevant information for identifying potential Environmental Justice concerns associated with specific projects, and did so early in the process.

All implementing agencies are asked to work very closely with their communities in identifying strategies to help minimize, mitigate, and/or avoid disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and low-income populations.

There are projects included in this MTP that by their nature, scope, and location will need to look into environmental justice issues especially closely. One such project is the Southwest Corridor, which was selected as one of out-year projects for the 2016 – 2025 timeframe. The public involvement process showed citizens were very concerned about this project's impact on the neighboring community (see letter from the South Valley Coalition of Neighborhood Associations in *Development and Review Process Supplement to the 2025 MTP*). The fact that some of the alternatives being considered for this facility are located in an area with a high concentration of low-income and high minority population groups makes public participation even more pertinent from an Environmental Justice perspective. It is imperative that neighborhood concerns be addressed by the project-

implementing agency. MRCOG will play an active role in this process in order to try and minimize conflicts and assure compliance with Federal Environmental Justice requirements.

## C. Financial Analysis

A Plan is said to be financially constrained when expenditures are not anticipated to exceed revenues over the life of the Plan. Table VI-9 shows that for this MTP anticipated revenues slightly exceed expected expenditures. The revenue and expenditure figures are contingent on the reasonable assumptions discussed in detail in Section V A. Anticipated expenditure details are provided in Table VI-10.

It is also important to note that the time frame for a number of projects included in the 2025 MTP (e.g. ITS implementation, I-40/Coors Boulevard interchange) has been constrained by financial realities, not by planning issues. If additional funds are made available to the urban area for these projects, implementation could be accelerated.

*Table VI-9 2025 MTP Revenue and Expenditure Summary*

	2003-2005	2006-2010	2011-2015	2016-2025	Totals
Total Anticipated Revenues	\$399,978,052	\$728,271,719	\$724,609,416	\$1,565,482,005	\$3,418,341,192
Total Anticipated Expenditures	\$404,830,558	\$739,349,089	\$693,587,889	\$1,552,637,885	\$3,390,405,421
Balance	-\$4,852,506	-\$11,077,370	\$31,021,527	\$12,844,120	\$27,935,771
Percent Difference	-1.21%	-1.52%	4.28%	0.82%	0.82%

*Figure VI-10 2025 MTP - Estimated Expenditures*  
(Total: \$3.4 billion)

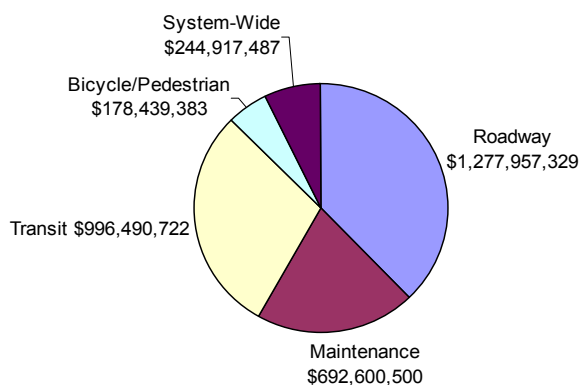


Table VI-10 2025 MTP Estimated Expenditures

<b>Roadways</b>	<b>2003-2005</b>	<b>2006-2010</b>	<b>2011-2015</b>	<b>2016-2025</b>
City of Albuquerque	\$37,347,000	\$87,713,120	\$7,398,208	\$57,871,960
Bernalillo County	\$2,291,000	\$14,740,000	\$10,321,000	\$38,904,000
City of Rio Rancho	\$7,502,600	\$24,566,000	\$9,580,000	\$31,618,960
Village of Los Ranchos de Albuquerque	\$4,970,000	\$806,560	\$0	\$0
NMSHTD	\$41,710,000	\$75,601,000	\$135,610,000	\$229,520,000
Unified Projects			\$7,676,000	\$13,788,000
Private Sector Roadways	\$33,197,376	\$84,157,029	\$65,015,896	\$159,569,120
	\$127,017,976	\$287,583,709	\$235,601,104	\$531,272,040
<b>Local Maintenance Expenditures (Road and Bikeways)</b>	<b>2003-2005</b>	<b>2006-2010</b>	<b>2011-2015</b>	<b>2016-2025</b>
Bernalillo County	\$21,000,000	\$35,000,000	\$35,000,000	\$70,000,000
City of Albuquerque	\$61,800,000	\$103,000,000	\$103,000,000	\$206,000,000
City of Rio Rancho	\$1,506,000	\$2,602,000	\$2,681,410	\$5,611,090
Corrales	\$120,000	\$200,000	\$150,000	\$300,000
Sandoval County	\$5,400,000	\$9,000,000	\$9,000,000	\$18,000,000
Village of Los Ranchos de Albuquerque	\$280,000	\$750,000	\$600,000	\$1,600,000
	\$90,106,000	\$150,552,000	\$150,431,410	\$301,511,090
<b>Other Expenditures</b>	<b>2003-2005</b>	<b>2006-2010</b>	<b>2011-2015</b>	<b>2016-2025</b>
Debt Service	\$21,525,000	\$35,875,000	\$24,500,000	\$0
NMSHTD Prior-Year Adjustments	\$6,067,500	\$8,515,000	\$0	\$0
<b>Total Roadway-Related Expenditures</b>	\$244,716,476	\$482,525,709	\$410,532,514	\$832,783,130
<b>Transit</b>	<b>2003-2005</b>	<b>2006-2010</b>	<b>2011-2015</b>	<b>2016-2025</b>
Transit Capital - FTA funded	\$16,339,515	\$28,446,894	\$26,796,548	\$66,358,749
Transit Capital - locally funded	\$11,000,000	\$11,000,000	\$16,500,000	\$40,150,000
Transit Operating - locally funded	\$70,106,430	\$121,596,412	\$127,799,051	\$382,212,111
Transit (Federal projects - not FTA)	\$4,828,956	\$8,048,260	\$9,145,750	\$23,500,919
Park and Rides	\$1,057,600	\$1,762,666	\$2,003,030	\$3,525,333
Job Access/Reverse Commute	\$562,500	\$937,500	\$937,500	\$1,875,000
Enhanced Transit System				\$20,000,000
<b>Total Transit</b>	\$103,895,001	\$171,791,732	\$183,181,879	\$537,622,111
<b>Bicycle/Pedestrian</b>	<b>2003-2005</b>	<b>2006-2010</b>	<b>2011-2015</b>	<b>2016-2025</b>
City of Albuquerque - PWD	\$17,166,980	\$25,153,635	\$10,625,000	\$21,250,000
City of Albuquerque - P & R	\$4,311,338	\$1,254,713	\$1,733,250	\$3,466,500
Bernalillo County	\$1,669,958	\$3,946,343	\$1,500,000	\$3,000,000
City of Rio Rancho	\$1,288,588	\$1,962,225	\$1,816,519	\$3,633,038
Los Ranchos	\$0	\$1,767,000	\$0	\$0
Village of Corrales	\$30,000	\$25,000	\$0	\$0
NMSHTD	\$0	\$0	\$0	\$0
Private Sector	\$3,329,658	\$3,551,800	\$4,070,300	\$8,140,600
Unified Projects	\$0	\$0	\$17,915,647	\$35,831,294
<b>Total Bicycle/Pedestrian</b>	\$27,796,521	\$37,660,716	\$37,660,716	\$75,321,431
<b>System-Wide</b>	<b>2003-2005</b>	<b>2006-2010</b>	<b>2011-2015</b>	<b>2016-2025</b>
Enhancements	\$4,816,340	\$8,027,234	\$9,121,857	\$16,054,468
Scenic Byways	\$569,861	\$949,768	\$949,768	\$1,899,536
Monitoring and Modeling	\$1,607,902	\$2,679,837	\$3,215,804	\$5,359,673
Corridor Studies	\$1,505,655	\$2,509,425	\$2,895,491	\$5,018,851
Intelligent Transportation Systems	\$16,271,997	\$27,119,995	\$30,818,176	\$54,239,990
Transportation Demand Management	\$3,650,804	\$6,084,674	\$15,211,684	\$24,338,695
<b>Total System-Wide</b>	\$28,422,560	\$47,370,933	\$62,212,780	\$106,911,213
<b>Total Identified Expenditures</b>	\$404,830,558	\$739,349,089	\$693,587,889	\$1,552,637,885



*Carbon monoxide levels in Bernalillo County are closely monitored.*

## D. Air Quality

### 1. Carbon Monoxide Air Quality Conformity

The area covered by the 2025 MTP includes Bernalillo County, which has been designated by the Environmental Protection Agency (EPA) as an attainment area for carbon monoxide (CO) under a maintenance plan. This means that the air in Bernalillo County is clean enough to meet health standards today, but that the County continues to receive federal funds in order to keep it that way.

By law<sup>16</sup> an air quality conformity analysis must be completed for the 2025 MTP. The conformity analysis must determine whether the 2025 MTP conforms to the State Implementation Plan (SIP) for carbon monoxide established for the County consistent with the 1991 Clean Air Act Amendments (CAAA). The SIP for carbon monoxide establishes minimum CO on-road mobile source emissions levels or “budgets” for target years. An on-road mobile source is defined as vehicles on paved, public streets. The SIP is approved by the Albuquerque/Bernalillo County Air Quality Control Board and is developed by the City of Albuquerque Environmental Health Department.

Mobile source emission budgets are set for specific years and are stated in tons of CO per day. Estimated emissions from on-road mobile sources cannot exceed the amount budgeted for that source in those years. The Albuquerque/Bernalillo County Air Quality Control Board (Air Board) established new on-road mobile source budgets for the County on February 12, 2003, as shown in Table VI-11. These budgets are currently undergoing approval by the Environmental Protection Agency.

*Table VI-11 On-Road Mobile Source Emissions Budgets, February 2, 2003*

Year	2002	2005	2006
Budget	369.53	367.28	312.65

The conformity analysis identifies the CO emissions that could reasonably be expected in Bernalillo County when the projects in the 2025 MTP are implemented. Projected emissions are the result of the interaction of vehicle miles of travel, roadway speeds, and other activities such as the Inspection and Maintenance program, which

makes it mandatory for individual cars' emissions to be tested. The resulting emissions estimates are compared to the mobile source emissions budgets established in the SIP for Bernalillo County. If the projected level of CO emissions does not exceed the established mobile source emissions budget, the group of projects being analyzed is determined to conform to the SIP. The conformity analysis must be completed and approved before the 2025 MTP can be approved.<sup>17</sup>

MRCOG has completed a conformity analysis for the set of projects included in the 2025 MTP and related 2004-2009 TIP. A comparison of the results of this analysis and the proposed budgets is provided in Table VI-12, which shows that the 2025 MTP can be said to conform to the SIP for CO for Bernalillo County and the on-road mobile source emissions budgets established by the Air Board in February 2003. At their April 16, 2003 meeting, the Air Board determined that the air quality conformity analysis for the 2025 MTP and 2004-2009 TIP conforms to the SIP for Air Quality.

For further information regarding how emissions estimates were obtained and local consultation regarding the process and results, *Air Quality Conformity Analysis Supplement, 2025 Metropolitan Transportation Plan*.

## 2. Ozone Emission Concerns

The AMPA is currently meeting the Federal standard for ozone, but overall ozone concentrations in the area have been increasing since 1990. In fact, they twice exceeded the federal standard in 1999. Subsequent exceedences over several years could lead to a formal violation of ozone standards. Ozone increases are generally a function of increases in Nitrogen Oxides (NOX) and Volatile Organic Compounds (VOC), which come from automobiles as well as industrial sources. For this reason, the 2025 MTP was evaluated for NOX and VOC, to determine potential impacts to ozone levels over the course of the plan. MRCOG model estimates show a 76 percent increase in these ozone precursors between 2000 and 2025. This estimated growth points out the need to start enhancing programs already in place (such as the transportation demand management and intelligent transportation system strategies) as soon as possible as these may help to reduce ozone levels. In tandem, the region's analytical tools need to be improved in order to gain better estimates of current and future ozone levels and to help identify and implement appropriate strategies for addressing this pollutant.

## 2025 MTP

*Table VI-12 Conformity Analysis, 2025 Metropolitan Transportation Plan  
Vehicle Miles Traveled (VMT), Speeds, and Carbon Monoxide Emissions, 2005 - 2025*

Vehicle Miles Traveled	2005	2006	2010	2015	2025
Urban					
Freeways	4,034,132	4,121,829	4,472,619	4,786,425	5,510,789
Principal Arterials	5,205,695	5,341,916	5,886,797	6,357,097	7,244,578
Minor Arterials	2,082,984	2,124,945	2,292,789	2,489,384	2,807,280
Collectors	1,386,574	1,419,895	1,553,177	1,701,258	1,877,505
Collectors and Above Total	12,709,385	13,008,584	14,205,381	15,334,163	17,440,151
Locals	1,270,939	1,300,858	1,420,538	1,533,416	1,744,015
<b>Urban Subtotal</b>	<b>13,980,324</b>	<b>14,309,443</b>	<b>15,625,919</b>	<b>16,867,580</b>	<b>19,184,166</b>
Rural					
Freeways	993,398	1,021,526	1,134,036	1,244,993	1,521,417
Collectors	500,623	519,947	597,239	658,599	801,352
Subtotal	1,494,021	1,541,472	1,731,276	1,903,593	2,322,769
Locals	149,402	154,147	173,128	190,359	232,277
<b>Rural Subtotal</b>	<b>1,643,424</b>	<b>1,695,619</b>	<b>1,904,403</b>	<b>2,093,952</b>	<b>2,555,046</b>
<b>Total VMT</b>	<b>15,623,747</b>	<b>16,005,062</b>	<b>17,530,322</b>	<b>18,961,531</b>	<b>21,739,212</b>

Speeds	2005	2006	2010	2015	2025
Urban					
Freeways	58.3	58.0	56.6	55.4	52.9
Principal Arterials	35.9	35.8	35.2	34.4	33.9
Minor Arterials	32.7	32.5	32.0	31.6	31.2
Collectors	30.2	30.1	29.5	29.0	28.3
Locals	20.0	20.0	20.0	20.0	20.0
Rural					
Freeways	68.0	67.4	65.0	63.0	61.2
Collectors	46.7	46.2	44.2	42.7	40.3
Locals	25.0	25.0	25.0	25.0	25.0
<b>VMT-Weighted Average Speeds</b>	<b>41.7</b>	<b>41.5</b>	<b>40.6</b>	<b>39.7</b>	<b>38.8</b>

Mobile Emissions - CO (T/d)	2005	2006	2010	2015	2025
Mobile 6 Budget	367.28	312.65	312.65	312.65	312.65
Emissions	344.71	308.31	272.01	249.02	246.79
Headroom	22.57	4.34	40.64	63.63	65.86

*Note: The geographic area is Bernalillo County; VMT is based on Average Daily Traffic.*

## E. Federal Planning Emphasis Areas

TEA21<sup>18</sup>, the current Federal Transportation Bill, lists seven planning emphasis areas that must be taken into account when projects and strategies are considered for inclusion in a transportation plan, like this MTP. The emphasis areas and a brief description of how they are addressed in the AMPA are provided below.

### **1. Support for the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency.**

MRCOG's transportation planning initiatives consider the economic vitality of the AMPA by assessing the ongoing needs of the transportation system and responding to those needs appropriately. Meeting the mobility needs of the workforce as well as those of services and goods increases the area's ability to compete in the global economy.

As part of other planning efforts, MRCOG has produced a Comprehensive Economic Development Strategy (CEDS 2000) for State Planning and Development District 3. A primary economic development strategy identified in the CEDS 2000 was for the District to continue to develop its infrastructure, including roadways and transit, to facilitate access to employment, labor, goods and services. Annual reports are developed each year to document the progress of economic development strategies and to evaluate their effectiveness in meeting the CEDS 2000 goals. The 2002 Annual Report noted that the area's transportation system continues to undergo substantial improvement. It noted in particular reconstruction of the Big I, improvements on I-40 in Tijeras Canyon east of the City of Albuquerque, the U.S. 550 widening project, expansion of Coors Boulevard to 6 lanes, expansion of N.M. 528 in Rio Rancho which provides access to Intel Corporation, and completion of the Alvarado Transportation Center as a regional transit and rail hub. It also identified the expansion of Eubank Boulevard near the Sandia Science and Technology Park as a critical element in the Park's development.

The 2025 MTP and 2004-2009 TIP contain funding for Job Access/Reverse Commute activities in the urban and surrounding areas. These activities provide important transportation linkages to TANF (Temporary Assistance to Needy Families) clients and other low-income citizens who need assistance getting to and from jobs.



*Sandia Science and Technology Park in southeast Albuquerque.*

The 2025 MTP also contains funding for an expanded roadway to Double Eagle II Airport and the surrounding business park. An anchor of this business core will be Eclipse Aviation, which has announced that it will begin moving 120 employees from its engineering division near Detroit to Albuquerque, in preparation for construction and sales of a business jet. The City of Albuquerque is designing this area to attract other businesses as well and it is anticipated to be a source of high-technology jobs in the future.

## **2. Increase the safety and security of the transportation system for motorized and non-motorized users.**

Safety is an important factor in the transportation system and is considered in all transportation planning activities in the AMPA. The relationship between non-motorized users and the automobile is especially critical. The Bicycle/Pedestrian Safety Education program and the Fourth Street project are two examples of current AMPA projects that address safety concerns.

Intelligent Transportation System (ITS) activities identified and discussed in Section V C4 of the 2025 MTP and programmed in the TIP are critical to providing safety and security for the AMPA's transportation system. With completion of the ITS Implementation Plan in 2003, this effort is expected to be enhanced. ITS activities also form a critical piece to addressing Homeland Security concerns.

Bicycle/Pedestrian subcommittees of the Public Involvement Committee and the Transportation Program Task Group have recently been established. These subcommittees will work together to address safety issues related to bicycling and walking.

## **3. Increase of the accessibility and mobility options available to people and for freight.**

Accessibility and mobility issues are evaluated throughout the facility planning process. MRCOG has recently developed an Accessibility model that uses a GIS environment to identify barriers to mobility and accessibility, especially in relation to the use of transit and bicycling facilities (see Section VI B). The application of this model is expected to have important impacts on the design of future transportation projects in the urban area. Funding for further enhancements of this and other model applications is included in the current TIP.

One of the primary tasks of the recently established Bicycle/Pedestrian subcommittees is the identification of barriers to accessibility and mobility for bicyclists and pedestrians. The subcommittees will work together to address these issues, and provide this information to the Transportation Program Task Group for their consideration during development of future TIPs.

MRCOG recently completed an incident management assessment which will be useful in identifying strategies for improving mobility in the urban area in relation to congestion management. The results of this assessment will be provided to the ITS Subcommittee and the Transportation Program Task Group for use in developing upcoming TIPs and further refinements to activities such as the Highway Emergency Lender Patrol, which is already underway.

#### **4. Protection and enhancement of the environment, promotion of energy conservation and improvement of the quality of life.**

One of the goals of the transportation planning process is to ensure that the transportation system is responsive to environmental considerations such as air quality. MRCOG continues to work towards ensuring that the maintenance designation for carbon monoxide is continued. Other efforts are aimed at promoting the use of alternative modes of transportation in order to improve air quality as well as conserve traditional energy stores. The types of projects programmed in the 2025 MTP and TIP that help to meet both energy conservation and air quality goals include ridesharing, transit, bicycle lane and trail development, signalization enhancements, roadway maintenance, intermodal facilities, and congestion mitigation efforts.

Regarding quality of life issues, a total of approximately \$19 million in Federal STP-Enhancements funds are included in the 2025 MTP over the life of the Plan. In addition, other enhancements projects are expected to be funded with STP-Urban and CMAQ monies. In the current TIP these include activities such as the Downtown Core Area Improvements project, visitors' centers, landscaping for the I-40/Louisiana interchange, and construction of bicycle and pedestrian facilities. These projects reflect community consensus about the importance of these types of projects for improving quality of life and are expected to be programmed in future TIPs under any of these Federal funding categories. A total of \$38 million for enhancement projects is included in the 2025 MTP.

**5. Enhancement of the integration and connectivity of the transportation system, across and between modes, for people and freight.**

Planning efforts in the AMPA continue to be multimodal as well as intermodal in nature (see Section V C7). This includes ensuring connectivity of the transportation system for the movement of goods as well as people. In the past year, this has included working with the consultant to the Middle Rio Grande Connections Project as well as completion of the Alvarado Transportation Center.

While MRCOG is the metropolitan planning organization for the AMPA, it also acts as the regional planning organization for the portion of SPDD 3 outside the AMPA boundaries. This makes it possible for MRCOG to coordinate the regional and metropolitan planning processes and to assure good connections between various transportation modes in and beyond the AMPA.

**6. Promotion of efficient system management and operation.**

Management and operation of the transportation system is similar to the preservation of the current system—it is critical to an efficient transportation system. Planning activities associated with this emphasis area include assessing the efficiency of the current system prior to recommending capacity improvements and development of a Regional ITS Plan. The ITS Regional Plan will focus on how the current system can be managed and operated more effectively using ITS strategies, thereby decreasing the need to construct more road miles.

More than \$176 million is included in the 2004-2009 TIP for projects that implement one or more congestion management system strategies from the MTP and Local Motion. Thus, approximately 87 percent of the \$203 million in funds programmed in the TIP is dedicated to relieving congestion and providing for an efficient transportation system. Of this, approximately 15 percent is programmed for transportation demand management activities, 16 percent for capital transit projects, 36 percent for transportation system management, and 32 percent for single occupancy vehicle capacity expansion.

**7. Emphasis on the preservation of the existing transportation system.**

Preservation of existing infrastructure is critical to ensuring the ade-

quacy of the transportation system. Maintaining existing infrastructure is a primary consideration when local transportation plans and programs are developed. About 52 percent of the lane miles affected by roadway projects in the 2025 MTP are undergoing reconstruction and/or rehabilitation work.

Section VI Notes:

1. U.S Bureau of the Census, 2000 Census.
2. The various areas shown below the AMPA were chosen specifically because they are outside of the AMPA's traditional job markets where job to housing ratios are higher.
3. Other elements impacting the commute time are congestion, type of service, time of the day, and day of the week.
4. A visual representation of this analysis is provided in Technical Documentation for the 2025 MTP. "Existing Network: Accessibility Levels to Bike Trails/Paths and Lanes" and "2025 Network: Accessibility Levels to Bike Trails/Paths and Lanes."
5. Please note that this preliminary analysis does not provide information about connectivity levels of this bikeway network, safety, usage or any other qualitative consideration related to the facility environment.

*(continued on next page)*

Section VI Notes continued:

6. Metropolitan areas refer to census designated metropolitan statistical areas (MSA). In New Mexico there are 4: Las Cruces MSA (Dona Ana County), Santa Fe MSA (Santa Fe and Los Alamos Counties), Farmington (San Juan County), and Albuquerque MSA (Bernalillo, Sandoval, Torrance and Valencia counties).
7. Employment represents all non-agricultural wage and salary jobs.
8. Projected expenditures for 2025 are expressed in 2000 dollars.
9. VHT does not include buses or bicycles.
10. The regulatory context provided by Title VI of the Civil Rights Act of 1964 (U.S.C. 2000d-1), the National Environmental Policy Act of 1969 (NEPA, 42 U.S.C. 4321), the FHWA/FTA Joint Planning Regulations implementing ISTEA consistent with Title VI (23 CFR 450 and 49 CFR 619, DOT Orders 5610.2 and 5610.2 of 1997 and 1998, and 23 U.S.C. 109(h)) support the guidelines for implementing Executive Order 12898 issued by President Clinton on February 11, 1994.
11. Methodological considerations for measuring equity and the geographic distribution of the benefits and burdens of transportation actions are based on the definitions listed in FHWA Order 6640.23, December 2, 1998, and in other federal guidelines, i.e. Executive Order 12898 of 1994; and DOT Order 5610.2 of 1994.
12. Two geographic units were used to disaggregate the presented data. First, Data Analysis Subzones (DASZ): These are zones created by MRCOG for modeling purposes. The size of the DASZs varies depending on population density. The boundaries follow major roads, highways, and other major physical bodies such as drainage channels. In almost all cases, DASZs are subdivisions of census tracts. These zones provide a common denominator for the allocation of data for analytical purposes. Maps for DASZ boundaries are available on MRCOG's website at [www.mrcog-nm.gov](http://www.mrcog-nm.gov). The second geographic unit used is the census tract. Census tracts are subdivisions of counties or American Indian Reservations established by the Census Bureau for statistical purposes prior to each decennial census. Census tracts in this area have been relatively consistent over time with most changes being limited to subdivisions of tracts that have experienced considerable growth. MRCOG has worked with the Census Bureau to ensure that census tract and DASZ geography is consistent.
13. For the purposes of this analysis, the minority population was divided into two groups: Hispanic Origin and Non-White Not Hispanic. Non-White Not Hispanic includes persons who identify themselves as Black, American Indian or Native American, Asian, Hawaiian, Pacific Islander, some other race, or multiracial.
14. For survey results, please see *Development and Review Process Supplement to the 2025 MTP*.
15. Copies of these articles are included in *Technical Documentation for the 2025 MTP*.
16. Section 176(c) of the Clean Air Amendment, as amended (42 U.S.C. 7401 et seq.), and the related requirements of 23 U.S.C. 109(j).
17. Details about the conformity analysis requirements can be found in 20 NMAC 11.03.
18. Transportation Efficiency Act for the 21st Century, also see text in margin on page II-13.